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RMRS Rocky Mountain Remediation Services, L.L.C.
. . . protecting the environment

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CORRES. CONTROL
OUTGONG LTR NO.

DOE ORDER # 4700.1
96RF00090

January 5, 1996

96-RF-00090
96-RM-ER-0217-KH

DIST.	LTR	ENC
Bengal, P.		
Benson, C. A.		
Buddy, M. S.		
Evans, C. S.		
Findley, M.		
Guinn, G.		
Guinn, L.		
Hopkins, J.		
Jenkins, K.		
Jierree, C.		
Konwinski, G.		
Law, J. E.	X	X
Luker, R.S.		
McAnally, J. L.		
McHugh, M. F.		
Motyl, K. M.	X	X
Parker, A. M.	X	X
Primrose, A. L.		
Power, A.		
Schubbe, D. L.		
Steffen, D. E.		
Tyson, A. M.		
Zeile, H.		
Hayes, WL	X	X
HOFFMAM, C	X	X
FRITZSIMMONS, J	X	X
ER REC CTR (2)	X	X
CORRES.CONTROL	X	X
RMRS CC	X	X
TRAFFIC		

CLASSIFICATION		
UCNI		
UNCLASSIFIED	X	X
CONFIDENTIAL		
SECRET		

AUTHORIZED CLASSIFIER SIGNATURE

DOCUMENT CLASSIFICATION

REVIEW WAIVER PER

CLASSIFICATION OFFICE

DATE

IN REPLY TO RFP CC NO:
22483-RF-95

ACTION ITEM STATUS
☐ OPEN ☒ CLOSED
☐ PARTIAL

LTR APPROVALS:

ORIG & TYPIST INITIALS:
WLH dql

Gerard M. Kelly
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ACTION PLAN FOR LANDFILL POND OPERATIONS (KH00003NS1A) – JEL-004-96

This correspondence transmits the Action Plan for the Rocky Flats Environmental Technology Site Landfill Pond. Department of Energy/Rocky Flats Field Office (DOE/RFFO) correspondence (11809) requested development of this plan by December 31, 1995. Transmittal of this plan has been delayed a few days due to resource limitations associated with end of the year commitments. The attached Action Plan addresses the concerns raised by the Office of the State Engineer as a result of the Office's April 27, 1995 inspection. Additionally, a recently noted scarp on the upstream face of the dam is detailed in the Action Plan, along with recommendations to correct this deficiency.

Operations of the Landfill Pond are detailed in the Pond Operations Plan, Rev. 1, which was completed December 22, 1995, by Rocky Mountain Remediation Services, L.L.C. Sitewide Actions Surface Water, approved by DOE/RFFO, and is currently under review by Colorado Department of Public Health and Environment and U. S. Environmental Protection Agency.

If you have any questions regarding the completion of this commitment, please contact Keith M. Motyl at extension 2172.

John E. Law, P.E.
Remediation Manager
Sitewide Actions

WLH:dql

Attachment:
As Stated

22.015.F

ADMIN RECORD

A-2007-000438

1/3

ROCKY FLATS SURFACE WATER LANDFILL POND ACTION PLAN - 1996

1.0 PURPOSE

The purpose of this plan is to addresses the concerns raised by the Office of the State Engineer of Colorado during an inspection of the Landfill Pond Dam conducted in April of 1995, and recommends actions to correct current maintenance issues.

2.0 BACKGROUND

Operation of the Sanitary Landfill began in 1968 to provide for disposal of nonradioactive solid wastes and will continue until the landfill is closed in 1997. In 1973, tritium was detected in water seeping from the landfill. In response, monitoring of waste for radionuclides was initiated and two ponds were constructed for the purpose of collecting runoff and leachate from the landfill. In 1981, the westernmost of the two ponds was filled to allow for an expansion of the landfill, and since that time, the remaining pond has been referred to as the Landfill Pond. The Landfill Pond receives direct precipitation and runoff from an area, approximately 18 acres, encompassing the landfill. The pond also receives leachate flow from a seep located near the base of the east face of the landfill.

3.0 CORRECTIVE ACTIONS

This section identifies deficiencies and/or concerns associated with the Landfill Pond Dam as raised by the Office of the State Engineer of Colorado and recommends corrective actions to address these concerns. In addition, a recently noted scarp on the upstream face of the dam is described, as are actions to correct this deficiency.

3.1 Concerns of the State Engineer

In the wet Spring of 1995, the pond had to be drawn down twice to maintain water levels below 50% capacity. During this period, wet areas were found at the toe and abutments, and action was taken to ensure water levels in the pond were reduced to minimize possible adverse effects. The Office of the State Engineer of Colorado was contacted by DOE/RFFO to inspect the dam and determine whether the actions taken were correct and if any further actions were necessary.

The Office of the State Engineer of Colorado inspected the Landfill Dam on April 27, 1995. The following three concerns were raised by the State Engineer:

1) Dam Crest Grading - The crest of the Landfill Pond Dam should be graded to eliminate tire ruts.

   The crest of the Landfill Dam was graded and the tire ruts were filled in July, 1995. Fiscal Year 96 funding is available to regrade dam crests should they become damaged or degraded by vehicular traffic or other erosion. No further action is presently required to address this concern.

2) Runoff Diversion - Runoff from north of the Landfill Pond Dam currently flows along the roadway which runs along the dam crest. The runoff should be diverted away from the top of the dam.

   Funding has been included in the RMRS Sitewide Surface Water Fiscal Year 1996 budget, Work Package 12385, for dam maintenance and repairs. A portion of this funding will be

used to divert water runoff from the hillside (on the north side of the dam) away from both the top of the dam and the left abutment of the dam. Priority will be placed on this effort to complete the runoff diversion prior to March 15, 1996, and the Spring 1996 wet season.

3) Outlet Works - The outlet works for the Landfill Pond Dam are not operational.

There are two issues related to the inoperable outlet works for the Landfill Dam.

First, blind flanges are reported to be in place at both the upstream and downstream ends of the outlet piping. The flanges were installed to eliminate the possibility of an inadvertent discharge into the No-Name Gulch below the dam. The downstream blind flange has been confirmed, but the upstream flange has not been confirmed since the upstream end of the outlet pipe is underwater and covered by sediments. RMRS Sitewide Surface Water personnel have been unable to lower the water level sufficiently and clear the sediments to make a determination. To make the outlet works operational, the blind flange(s) would have to be removed.

The second issue is a bent valve stem rod which controls the upstream valve on the outlet works. The rod must either be straightened or replaced before it can be used to control the upstream valve from the dam crest.

No funding exists in the Fiscal Year 1996 budget to address either of these two issues. Since this situation would be costly and difficult to fix, an application should be made for a waiver until such time as a method for managing the landfill seep is selected and implemented, and a mode of operation for the Landfill Pond established.

3.2 Scarping of Upstream Dam Face

RMRS has identified another concern which has developed since the State Engineer's inspection. During the week of November 27, 1995, dam operations personnel noted a scarp (a steep slope formed by fracturing) along the length of the upstream slope of the Landfill Dam. The scarp was found to be approximately two feet deep with benching of the eroded material occurring below the water level. Additionally, lesser scarping and benching action was observed at various levels above the current level and below the level of the riprap covering the upper portion of the slope.

Historical photographs of the Landfill Dam indicate the upstream slope was covered uniformly with cobbles, which were overlain with riprap on the upper portion of the slope in 1991. The cobbles are no longer visible on the lower portion of the slope below the level of the riprap. It is believed that riprap placement operations may have loosened the outer shell material of the dam which then slid down slope, covering the cobble layer in a loose, uncompacted layer. Ensuing wave action when the water level was below the riprap level has caused further sliding and benching of the loose material. The water in the reservoir has subsequently been lowered 1.7 feet in elevation to prevent further erosion of the large scarp area. However, a scarp may occur at the current reservoir elevation.

While it is not believed that the current scarping is an imminent threat to the dam's overall stability, it is likely that the loosened shell material will continue to slide. The possibility of slides of shell material and riprap exists if shell material is eroded directly below the riprap level. Additionally, drawdown of the reservoir in the spring after the spring runoff has filled the reservoir may cause further sliding of the material, and drawdown rates may need to be adjusted to minimize the effects of the drawdown (the drawdown rate will never exceed 1 ft/day).

Since breaching of the Landfill Pond Dam may occur in 1998, remedial actions to repair the scarp are not recommended at this time. Dam operations personnel will continue to monitor the condition of the dam and report any worsening in the dam's condition which may warrant action. The water level in the pond will be maintained away from the scarp area to minimize further erosion. The waterline will likely be maintained below the scarp area prior to the spring runoff, and above the scarp area after the runoff period.